

Weather Report of the Imperial Marine Observatory at Kobe, the westward advance of this typhoon was checked by a strong anticyclone over Mongolia and its course was changed to the northeastward. The center passed to the southeast of the Bonin Islands on the 9th.

From the 15th to the 24th pressure was low at Honolulu, and during this period a poorly defined depression moved eastward in the latitude of the Hawaiian Islands. By the morning of the 25th it had developed into an energetic storm and was encroaching upon the California coast, where phenomenally heavy precipitation occurred during the last week of the month. At the same time fresh depressions were moving eastward across Bering Sea and gales were being experienced by vessels in mid-ocean.

As a result of the long stormy period that prevailed over the northeastern portion of the Pacific during the last part of November and the first part of December an unusual and altogether unpleasant experience fell to the lot of the American S. S. *Eldridge*. This vessel under command of Capt. F. W. Brooks, Observer E. J. Stull, sailed from Seattle on November 19, just in time to become involved in the severe storm that prevailed on the Oregon and British Columbian coasts on the 21st. From that time on until December 19, when her report ends, the

Eldridge experienced no less than nine distinct gales. Winds as high as force 11 were recorded on four occasions. The lowest barometer was 28.67 inches. This was recorded at 7:45 p. m. on December 6, in $42^{\circ} 18' N.$, $165^{\circ} 35' W.$ Fifteen minutes later the vessel was in the "eye" of the storm. Mr. Stull states that there was a huge sea, the waves being estimated to have a height of 35 to 45 feet and a length of 550 feet.

Gales were of frequent occurrence throughout the month along the principal steamer routes. Generally they were from a westerly or southerly direction, the centers of the depressions which gave rise to them keeping well to the northward. Second Officer G. Clarke of the British S. S. *Empress of Japan*, which made the voyage from Yokohama to Vancouver between the 2d and 12th, stated in his report that average weather for the season prevailed between those dates. The *Empress of Japan* experienced fresh gales from the northwest and north, with high seas. The weather was mostly clear, with occasional light snow squalls. On the 7th, when in $46^{\circ} 57' N.$, $169^{\circ} 30' E.$, the barometer fell to 28.55 inches.

The Swedish sailing yacht *Fidra*, Capt. Tamm, bound from Suva, Fiji Islands, to Yokohama, was involved in a gale on the 29th and 30th (Eastern time) in $32^{\circ} 35' N.$, $141^{\circ} 30' E.$ According to Observer N. van Ryswijk, the gale began at SW. and by 8 a. m. of the 29th had reached force 9, SW. It continued to increase in strength until 5 a. m. of the 30th, when it was blowing with force 12, WNW. By 8 a. m. of the same day it had decreased to force 7, WNW. The lowest barometer recorded was 29.68 inches, at noon of the 29th.

For the month as a whole pressure was above normal by approximately 0.06 inch at Dutch Harbor and 0.02 inch at Midway Island. At Honolulu it was practically normal.

TROPICAL HURRICANE OF SEPTEMBER 5-15, 1921.

In the September issue of the REVIEW there were several references to a hurricane that appeared to the

southeast of Bermuda on September 12. This hurricane traveled northeastward across the North Atlantic and was last observed on the morning of the 15th in $53^{\circ} N.$, $35^{\circ} W.$

It was thought at first that this tropical cyclone formed in the region immediately to the eastward of the Bahamas about September 10 but from later advices it appears that it was in existence as early as the 5th and on that date was probably near $22^{\circ} N.$, $54^{\circ} W.$

The earliest information regarding it is contained in a report by Second Officer A. C. Bos, of the Dutch S. S. *Neptunus*, as follows:

Monday, the 5th of September coming from Amsterdam and bound for St. Thomas, we had different apparitions that showed the approach of a hurricane.

Being on $25^{\circ} 11' N.$ and $55^{\circ} 50' W.$, we had a gentle southeasterly breeze, increasing that afternoon to a strong breeze from the NE. About 10 o'clock p. m. (G. M. T.) the sky was overcast, the sea rough with easterly swell and it lightened in a southerly direction. Our barometer, indicating 764.1 mm. (30.08 inches) at 8 o'clock, continued falling. The course was S. $48^{\circ} W.$ (true).

At 11 o'clock, the wind was 7-8 then, we heaved and went slowly to the NE. (barometer 763.7 mm., 30.07 inches). After that the wind became ESE. and abated a little; at midnight (about 4 o'clock G. M. T.), we had a strong breeze, still ESE., the sky was rather clear and we continued our voyage.

Toward daybreak the wind increased and the sky became overcast again; at 12 o'clock, the wind was then ESE., the sea high with a heavy southerly swell and the barometer did not rise, we went full speed NE. Again the wind abated by little and little, the sea became better and as the barometer got its regular process, we steered at 6 o'clock p. m. once more S. $48^{\circ} W.$ and reached St. Thomas the 9th of September where they expected a storm.

The 7th and 8th of September we had a fresh or moderate breeze (SE. to SSE.) and observed nothing particular.

The Dutch S. S. *Noorderdijk*, Capt. A. B. Jochems, Rotterdam for Colon, was under the influence of the hurricane on the 7th and 8th, the center evidently passing across her bow on a west by north course at a distance of perhaps 150 miles. At 8 a. m. of the 7th, when in $25^{\circ} 56' N.$, $60^{\circ} 16' W.$, the wind was ESE., force 6, cloudy sky, rough sea, moderate ESE., swell, barometer 29.98. At 4 a. m. of the 8th the wind had increased to a fresh ESE. gale. By 8 a. m. it had shifted to SW. and moderated to a strong breeze. The sky was cloudy. There was a high SE. swell, shifting and decreasing to a light SW. swell. Much rain fell during the day. At 7:46 a. m. of the 8th, the *Noorderdijk* was in $23^{\circ} 14' N.$, $63^{\circ} 28' W.$ At that hour the wind was SW., 7, barometer 29.83 inches.

The next vessel to become involved was the British S. S. *Camito*, Capt. J. H. Scudamore, Avonmouth for Kingston, calling at Grand Turk, Bahamas. It was thought at first that the *Camito* had been in the center of the hurricane but Capt. Scudamore states that this information was incorrect. His report is as follows:

On Friday, September 9, the barometer commenced to fall at 6 a. m.; there was a light ESE. wind, weather fine and clear, barometer 30.13. Between 8:30 and 10:30 a. m. very heavy rains squalls, wind variable and light, hauling to south, barometer 30.11. Noon. Position $25^{\circ} 30' N.$, $63^{\circ} 23' W.$ Overcast, clouds breaking to southwest, very green shadows close to horizon. 3 p. m., wind S. by E., force 6, barometer 30.00, sea rough and increasing, continual heavy rain squalls. 8 p. m. strong S. by E. breeze, rough sea, barometer steady though pumping. Midnight, wind S., barometer 29.98, continuous heavy rain.

September 10, 4 a. m., wind S., force 8, occasional rain squalls, barometer 29.96. 5 a. m., wind shifted to SW., clearing at times, squally, rough sea. 8 a. m., light SW. breeze, slight swell, cloudy and clear, barometer 30.05.

A revised track of this hurricane is shown in figure 1, p. 658, this REVIEW.—F. G. T.